

CLAIMS

1. An aluminate phosphor comprising an aluminate represented by
a general composition formula: $7(\text{Sr}_{1-x}\text{Eu}_x)\text{O} \cdot y\text{Al}_2\text{O}_3$, wherein $0 < x \leq 0.5$ and
5 $1 \leq y \leq 36$.

2. The aluminate phosphor according to claim 1, wherein
 $0.001 < x \leq 0.3$ and $3 \leq y \leq 27$ in the general composition formula.

10 3. The aluminate phosphor according to claim 2, wherein $y=12$ in
the general composition formula.

4. The aluminate phosphor according to any one of claims 1 to 3,
wherein the aluminate phosphor emits light in a violet to blue-green region
15 by ultraviolet excitation.

5. A method for producing an aluminate phosphor,
wherein the aluminate phosphor comprises an aluminate
represented by a general composition formula: $7(\text{Sr}_{1-x}\text{Eu}_x)\text{O} \cdot y\text{Al}_2\text{O}_3$, wherein
20 $0 < x \leq 0.5$ and $1 \leq y \leq 36$,
comprising:

(1) a step of producing a powder of organic metal chelate
complexes including Sr, Eu and Al as metal components,

(2) a step of firing the powder obtained in the step (1) to obtain a multi metal oxide,

(3) a step of reducing the multi metal oxide obtained in the step (2).

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6. The method according to claim 5, wherein the step (1) comprises mixing the metals or compounds thereof and an organic chelating agent, and/or metal chelate complexes of the metals so as to be a predetermined metal composition; thereby forming a transparent aqueous solution of organic metal chelate complexes; and spray-drying the aqueous solution to obtain a powder.

7. The method according to claim 5 or 6, wherein an aminocarboxylic acid-based chelating agent and/or salt thereof is used as the organic chelating agent.

8. The method according to any one of claims 5 to 7, wherein a complex consisting of an aminocarboxylic acid-based chelating agent and a metal ion, and/or salt thereof is used as the metal chelate complex.

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9. The method according to any one of claims 5 to 8, wherein the reducing treatment is carried out at about 1400°C in the step (3).

10. The method according to any one of claims 5 to 9, wherein the reducing treatment is carried out in an argon and hydrogen atmosphere or in a nitrogen and hydrogen atmosphere in the step (3).